

Cone Fatigue

What to do:

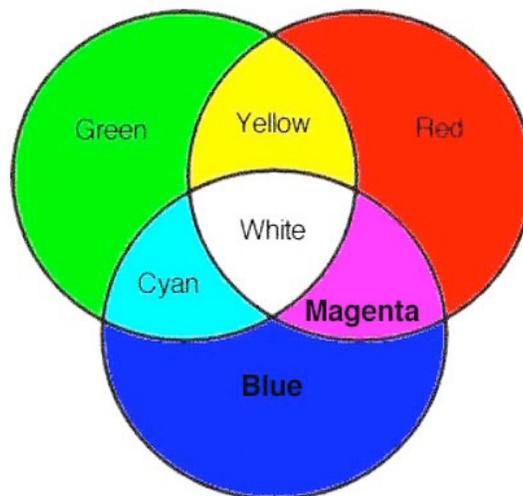
Look around. Do you see a blind spot anywhere? Maybe the blind spot for one eye is at a different place than the blind spot for the other (this is actually true), so you don't notice it because each eye sees what the other doesn't.

Stare at the image on the other side of this page for 20 seconds and then look at a blank white area. The after image you see has the opposite colors of the picture you just stared at due to "cone fatigue."

Why does this happen:

The eye contains special cells called photoreceptors that detect light. We have two types of photo-receptors - rods and cones. Rods can detect light and dark while cones are good at detecting colors such as red, green and blue. When you stare at a specific color for too long, the cells that detect that color will get tired, or fatigued. The after image is a result of all your photoreceptors not being in balance. As the photoreceptors become less tired, which takes between ten and thirty seconds, the balance is recovered and the after image disappears.

When red, green and blue are added together we see white (see picture below). If you stare at something red, your red cones will get tired. If you then look at something white, you will see an afterimage that is cyan, the complementary color of red. If you stare at something green, the afterimage will be magenta. Once the cones recover from fatigue and become active again, the after image disappears.

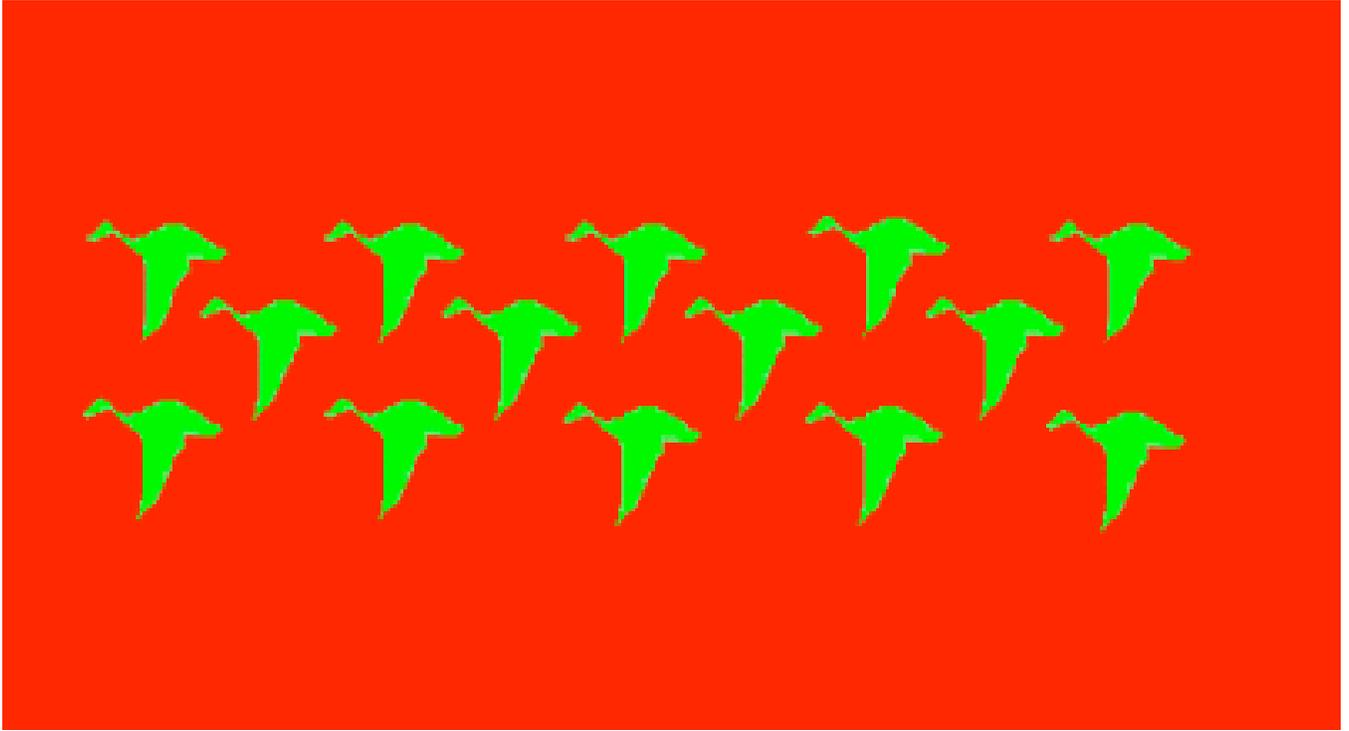


Vision scientists study why photoreceptors get fatigued and how they recover. These studies help us to understand a lot about how people see and tell us things such as what happens with prolonged exposure to colored screens or reading materials.

Find out more at www.arvo.org/illusions

Text adapted from: <http://serendip.brynmawr.edu/bb/neuro/neuro06/web2/aschmid.html>

Image from: <http://webvision.med.utah.edu/book/part-viii-gabac-receptors/color-perception/>



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